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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/930,757 | 08/15/2001 | Stanley K. Ling | 10559-485001/P11402 | 2057 |
| 8791 | 7590 | 07/07/2005 | EXAMINER | |
| BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD SEVENTH FLOOR LOS ANGELES, CA 90025-1030 | | | MEEK, JACOB M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2637 | |

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/930,757

Applicant(s)

LING ET AL.

Examiner

Jacob Meek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-7, 11-13, 17-22 and 26-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 7, 12, 13, 18, 19, 26 - 29 is/are allowed.
- 6) ☒ Claim(s) 5, 11, 17, 20 - 22 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 12, filed April 1, 2005, with respect to double patenting rejection of claims 1, 8, and 14 have been fully considered and are persuasive. The double patenting rejection of claims 1, 8, and 14 has been withdrawn in view of amended claims.
2. With regard to applicant's traversal of rejection 102 and 103 art rejections in view of amended claims, this is accepted for claims 6, 7, 12, 13, 18, 19, and 26 – 29.
3. Applicant's arguments with respect to claim 5, 11, 17, and 20 - 22 have been considered but are moot in view of the new ground(s) of rejection. New grounds of rejection were necessitated by applicant's IDS filing dated 4/21/05.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 5, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee and Messerschmitt (Digital Communications, Chapter 9, Adaptive Equalization).

With regard to claim 5, Lee discloses a method of generating coefficients for use in an adaptive comprising: generating 1st coefficients for use by the adaptive equalizer to reduce precursor ISI generating 2nd coefficients for use by the adaptive equalizer to whiten noise in the input signal (see page 394 – 395, Section 9.3, 1st and 2nd paragraphs), wherein 1st and 2nd

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coefficients are used in 1st and 2nd taps in a FIR feedforward, 1st coefficients are generated based on input signal and noise (see page 394 - 395, Section 9.3, 2nd paragraph where non-causal coefficients are interpreted as equivalent), and the noise is estimated by subtracting (figure 9-10, page 394, E_k where this is interpreted as equivalent) a substantial replica of input signal (figure 9-10, page 394, \hat{A}_k where this is interpreted as equivalent) from a delayed version of input signal and noise (figure 9-10, page 394, Q_k where this is interpreted as equivalent).

With regard to claim 17, Lee discloses an adaptive equalizer incorporating the method claimed in claim 5 above and is similarly analyzed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11, 20 - 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and Messerschmitt (Digital Communications, Chapter 9, Adaptive Equalization).

With regard to claim 11, Lee discloses the limitations of claim 5 above. Lee is silent with respect a machine-readable medium. Lee discloses that his system is based on an algorithm, which is interpreted as being processor based. Therefore it would have been obvious for one to provide machine-readable media in order to render an algorithm operable.

With regard to claim 20, Lee is silent with respect to circuitry utilizing memory for storing machine executable instructions and processor for execution. Lee discloses that his system

is based on an algorithm, which is interpreted as being processor based. Therefore it would have been obvious for one to provide a processor, and memory in order to render an operable system.

With regard to claim 21, Lee is silent with respect to circuitry utilizing discrete HW components to generate coefficients. Lee discloses that his system is based on an algorithm, and performs arithmetic functions. Therefore it would have been obvious for one to provide HW components to facilitate the processing and analysis of data to render an operable system.

With regard to claim 22, Lee is silent with respect to circuitry utilizing discrete HW components include logic gates. Lee discloses that his system is based on an algorithm, and performs arithmetic functions. Therefore it would have been obvious for one to provide HW components, including logic gates, to facilitate the processing and analysis of data to render an operable system.

Allowable Subject Matter

6. Claims 6, 7, 18, 19, 26 – 29 are allowed.
7. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter: the method of generating separate 1st and 2nd coefficients for use in a feedforward equalizer does not appear to be anticipated or rendered obvious by prior art.

Other Cited Prior Art

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Baugh (US-5,150,379), Kawas Kaleh (US-5,436,929), Martinez (US-6,011,814), Ariyavisitakul (US-6,012,161), Friedman (US-6,118,814), Takeuchi (US-6,289,046), and Shah (US-6,490,327) all disclose adaptive equalization apparatus and methods. NPL reference is provided as background.

Conclusion

10. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on April 21, 2005 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

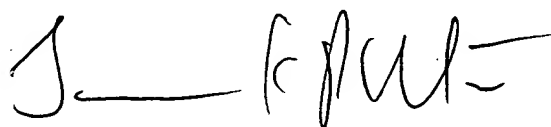
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Meek whose telephone number is (571)272-3013. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571)272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMM



JAY K. PATEL
SUPERVISORY PATENT EXAMINER